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INTERACTIVE TEXT EDITING FOR THE SIGMA 5. (U)  
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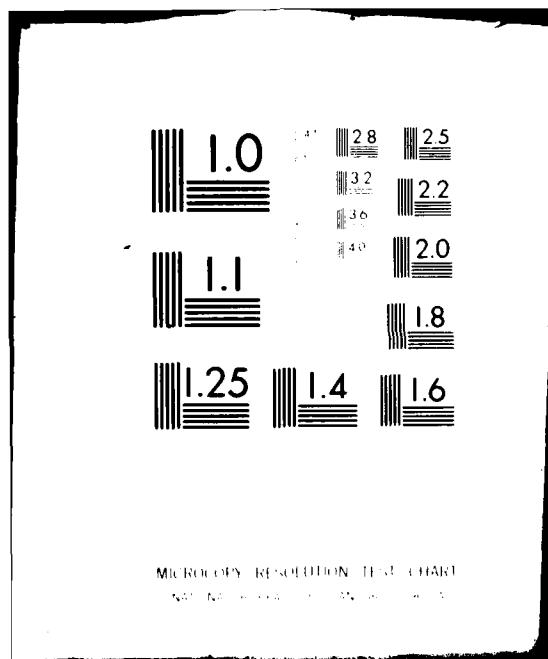
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TECHNICAL REPORT RG-CR-80-8

INTERACTIVE TEXT EDITING FOR  
THE SIGMA 5  
FINAL REPORT

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Huntsville, Al. 35805

For  
Guidance and Control Directorate  
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**U.S. ARMY MISSILE COMMAND**  
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## INTERACTIVE TEXT EDITING FOR THE SIGMA 5

### I. INTRODUCTION

In the early 1960s, when systems such as the Sigma 5 were being released, most software development was done in a batch processing environment. Facilities for the interactive development of software were the exception rather than the rule.

Steadily declining hardware costs coupled with rising software development costs have created a new emphasis on improving the efficiency of software development utilities through interactive processing.

This report examines the requirements and implementation of one such utility, an interactive text editor for the Sigma 5.

## II. EDITOR DESIGN AND IMPLEMENTATION

In general, a text editor reads symbolic information (be it source code, text or whatever) from some input file into an area of memory, performs some operation(s) on this information, and writes the result to an output file. A more detailed discussion of this process follows.

Input and Output Files. An editor input or output file is defined as a file, residing on magnetic disk, containing zero or more lines. A line is an 80-byte long record, corresponding to the standard 80 column punched card.

For the Sigma 5, under the RBM operating system, these requirements imply a compressed file format. The FSIZE parameter of the output file should be set to the expected number of lines in the workspace buffer at the conclusion of an edit session.

Consideration was given to using dynamic mass storage allocation to allow the size of the output file to vary during an edit session. However, since RBM requires a contiguous area for all disk files, there is no way to guarantee that sufficient disk space exists at the end of an arbitrary output file for dynamic expansion.

Workspace Buffer. In order to efficiently process the data read from the input file, this data must be placed in a memory resident workspace buffer. Since there is a relatively large access delay on a disk (due to seek and latency times), the workspace buffer should be as large as possible to maximize the amount of data transferred in a single disk access.

Coupled with this, however, is the constraint that the total program and buffer size cannot exceed available memory.

In a virtual memory system (e.g., DEC VAX 11/780), the available memory space is limited only by the amount of available secondary storage. The operating system pages information in and out of memory to maintain the portion of the buffer being operated on in memory.

In non-virtual systems, such as the Sigma 5, the available buffer space is limited to the amount of physical memory allocated to the user. If this memory space is too small (i.e., unable to contain the largest file which will be edited), a paging scheme similar to that of the virtual system must be implemented.

Typically, a set number of lines (page) is read into the workspace buffer. The user may then edit lines within the page. When a reference is made to a line beyond the end of the page, the current page is written to the output file and a new page is read from the input file. References to a line before the beginning of the page cause the remainder of the input file to be copied to the output file, and the output file is reopened as the new input file.

The system on which this editor was implemented had a 32K word block of memory available, which is sufficient for the program and a workspace buffer of approximately 1100 lines. Since the great majority of files at this facility were less than 1100 lines long, no paging facility was implemented.

The commands available to the user have a great influence on the design of the workspace buffer. The requirement that insertions and deletions be allowed at arbitrary points within the file, and that movement within the file (forward and backward) be unrestricted, dictates a doubly-linked list structure for the workspace buffer. A stack of available buffer locations should be maintained so that deleted lines may free their buffer space.

#### Edit operations

Any editing task may be specified in terms of one of three basic operations. These are:

- (1) Insert a new line
- (2) Delete an existing line
- (3) Change an existing line

Additionally, commands must be provided to position to the desired line within the workspace buffer.

These commands form a functionally complete set of commands which can be used to perform any editing operation. Convenience of use can be greatly increased, however, with additional commands to do such things as FIND a particular string, MOVE particular lines from one place to another, and so on.

The commands incorporated into the current version of the editor for the Sigma 5 are shown in Table 1.

Currently, the specification of input and output files is performed by control commands sent to the RBM monitor. An effort is underway to allow the

TABLE 1. EDITOR COMMANDS

NOTE: Braces {} indicate an optional field. Reserved words are indicated by capital letters, lowercase letters indicate user-supplied fields.

CR indicates carriage return.

B indicates a required blank

I {NSERT} {B string} CR  
If string is specified, it is inserted following the current line. Otherwise, an insert mode is entered, and all lines typed will be entered following the current line. The insert mode is exited by entering CR as the first character of a line.

D {ELETE} {n}  
Deletes the current and next n-1 lines. If n is not specified, the current line is deleted.

+ {n}  
Advances the current position pointer n lines. If n is not specified, 1 is assumed.

- {n}  
Backs up the current position pointer n lines. If n is not specified, 1 is assumed.

T {OP}  
Moves current position pointer to top of workspace.

B {OTTOM}  
Moves current position pointer to bottom of workspace.

P {RINT} {n}  
Prints current and next n-1 lines. If n is not specified, 1 is assumed.

C {HANGE} {B delimiter old string delimiter new string delimiter}  
Changes first occurrence of old string in current line to new string. First non-blank character is taken to be the delimiter. If trailing delimiter is not specified, new string is assumed to extend to the end of the line.

TAB {tab<sub>1</sub>, tab<sub>2</sub>, ... tab<sub>n</sub>}  
Sets up to 11 tab positions. The command has no effect if no tabs are specified.

TABLE 2. SAMPLE JOB STREAM

! JOB EDIT, IFILE	
! STDLB (SI, D3, IFILE)	(1)
! STDLB (SO, D3, OFILE)	
! EDIT	(2)
! FIN	

NOTES:

1. The STDLB command should be used to assign SI to the edit input file and SO to the edit output file.
2. In order for EDIT to be loaded into memory, the user must do an FMEM Ø Keyin.

files to be specified from the edit terminal (in this case a Tektronix 4002). The sample job stream for the current configuration is shown in Table 2.

Also under development are modifications which will allow the editor to run as a foreground program with interrupt driven I/O routines. This will allow background batch processing to run concurrently with edit I/O operations. Since most of the time used by an editor is in waiting for user response and in doing I/O, interrupt driven operation of the editor will have very little effect on the turnaround time for background jobs.

Appendix 1 shows a sample edit session using the current version of the editor.

Appendix 2 is a listing of the editor program.

### III. CONCLUSIONS AND RECOMMENDATIONS

The interactive text editor described in this report has been installed on the Sigma 5 system located in the Guidance and Control Analysis facility at Redstone Arsenal.

Use of this processor has resulted in a significant decrease in time required to create and update files of symbolic data.

It is recommended that this processor be expanded to include capabilities such as to FIND a particular string, to MOVE a line or group of lines to some location, and a capability to define MACRO commands consisting of several edit commands.

These enhancements should reduce even further the amount of time required for symbolic data entry and maintenance.

## REFERENCES

1. Xerox Sigma 5 Computer Reference Manual, Document No. 90 09 59E, October 1971.
2. Hybrid Remote Batch Monitor Operator/User Manual for Redstone Arsenal, Code Research Corporation, July 1971.
3. Xerox Real-Time Batch Monitor RBM Operations Manual, Document No. 90 15 81D, April 1971.
4. Xerox Real-Time Batch Monitor RBM Operations Reference Manual, Document No. 90 16 47D, October 1972.
5. Xerox Real-Time Batch Monitor RBM User's Guide, Document No. 90 16 53B, October 1972.
6. Hazel, Larry, Plotter, an Interactive Program Control and Plot Generation Package for the Sigma 5, Science Applications, Inc., Huntsville, AL, Report NO. SAI-78-763-HU, August 1977.
7. RSX-11 Utilities Procedures Manual, Digital Equipment Corporation, Maynard, MA. Order No. AA-5567B-TC, December 1977.

**APPENDIX 1**  
**SAMPLE EDIT SESSION**

\*BOF\*

EDI>I

>IN THIS DEMONSTRATES THE INSERT MODE.  
>WHEN AN INSERT COMMAND IS FOLLOWED  
>ONLY BY A CARRIAGE RETURN THE INSERT  
>MODE IS ENTERED. TO EXIT THE INSERT  
>MODE ENTER A LINE CONSISTING ONLY  
>OF A CARRIAGE RETURN.

IN >

EDI>TOP

\*BOF\*

EDI>PRINT 5

\*BOF\*

>THIS DEMONSTRATES THE INSERT MODE.  
>WHEN AN INSERT COMMAND IS FOLLOWED  
>ONLY BY A CARRIAGE RETURN THE INSERT  
>MODE IS ENTERED. TO EXIT THE INSERT  
EDI >

+2

>OF A CARRIAGE RETURN.  
EDI>CHANGE /CARRIAGE/HORSE AND BUGGY/  
>OF A HORSE AND BUGGY RETURN.

EDI>TOP

\*BOF\*

EDI>P ?

\*BOF\*

>THIS DEMONSTRATES THE INSERT MODE.  
>WHEN AN INSERT COMMAND IS FOLLOWED  
>ONLY BY A CARRIAGE RETURN THE INSERT  
>MODE IS ENTERED. TO EXIT THE INSERT  
>MODE ENTER A LINE CONSISTING ONLY  
>OF A HORSE AND BUGGY RETURN.

EDI>-5

>THIS DEMONSTRATES THE INSERT MODE.  
EDI>DELETE  
>WHEN AN INSERT COMMAND IS FOLLOWED  
EDI>TOP

\*BOF\*  
EDI>P 3  
\*BOF\*  
>WHEN AN INSERT COMMAND IS FOLLOWED  
>ONLY BY A CARRIAGE RETURN THE INSERT  
EDI>BOTTOM  
>OF A HORSE AND BUGGY RETURN.  
EDI>I THE INSERT COMMAND CAN ALSO BE  
EDI>I USED IN A SINGLE LINE INSERTION MODE  
EDI>I LIKE THIS.  
EDI>-S  
>MODE IS ENTERED. TO EXIT THE INSERT  
EDI>PRINT 5  
>MODE IS ENTERED. TO EXIT THE INSERT  
>MODE ENTER A LINE CONSISTING ONLY  
>OF A HORSE AND BUGGY RETURN.  
>THE INSERT COMMAND CAN ALSO BE  
>USED IN A SINGLE LINE INSERTION MODE  
EDI>

(TO TERMINATE THE EDIT SESSION AND  
WRITE THE WORKSPACE BUFFER TO THE OUTPUT  
FILE USE THE END COMMAND)

EDI>END  
\*END\*

APPENDIX 2  
LISTING OF EDITOR PROGRAM

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Subroutine 3 IF3
SUBROUTINE READS A PAGE FROM THE DISK FILE ASSOCIATED WITH JUNIT
IN INT9 THE WORKSPACE BUFFER, ACCORDINGLY THE LINKS FOR THE BUFFER
ARE SET UP, AND THE FREE WORDS ARE SET IN THE AVAIL STACK.

70      CALL BYT  MAIN
71      A0      DIFFERENT
72      CALLS 2 DIFFERENT
73      100
74      110
75      111
76      112      142-IC1T INT32 (A+7)
77      113      29419N /19/ 1N, SJT, LAREA, FNAM, ZNAME, DFNAME
78      114      29419N BUFFER, FLINK, 3LINK, HEAD, TAIL, AVAIL, F9P,
79      115      1 LINE, E9P
80      116      1 DIMENSION BUFFER(120),LINK(1200),LINK(1200),AVAIL(1200)
81      117      GET MAX LINES IN BUFFER
82      118      FOR PROGRAM VERSION, ALLOW END OF MEMORY (1000) HEX - PEND
83      119      DIVIDED BY 21 WORDS PER LINE (20) DATA, 2 LINK, 1 STACK, 41 WORDS EXPANSION
84      120      AREA. FOR N9, ASSUME BUFFER, LINKS AND STACK ARE AS DECLARED IN
85      121      DIMENSION STATEMENT, AND THAT THE PAGE SIZE IS 1100 LINES
86      122
87      123      230      TE9P DE9P 3975
88      124      IN * 2
89      125      END 230
90      126      E9P * 0
91      127      READ IN PAGE FROM JUNIT IN
92      128
93      129      29 7 N01,1100
94      130      CALL BUFFERIN(1N,103BUFFER(11,20,STAT))
95      131      IF (STAT .EQ. 3) E9P = 11 39 75 9
96      132      7 CANTINUE
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630 16 THIS CHAR DOESNT MATCH YESTERDAY, TRY NEXT C40  
640 17 IX XNE. Y1 39 T9 30  
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CONTINUE  
99 FOR NEXT COMMAND (NEXT C40)  
CONTINUE  
CONTINUE  
16 AF HAL. YESTERDAY AGAIN, RESEND C40. R29441 AND TRY AGAIN  
CALL 9JFSC925 (11115AL C94444D), RESEND 20, 1, 251  
39 T9 10  
END

1 SJ33211 TAB  
2 SJ33211 VTFGE3 (A-7)  
3 C14AF(P2), C91, 993, V2, FA35(11)  
4 29419 V / 29 / C14AF(P2), C91, 993, V2, FA35(11)  
5 FFC93E (76,10,C94357, 295,(TA35(11),1,1,11)  
6 F92MAT (44,11)  
7 CALL TA35(9)(TA35(1)+2,TA35(2)+2,TA35(3)+2,  
8 TA35(4)+2,TA35(5)+2,TA35(6)+2,TA35(7)+2,TA35(8)+2,  
9 TA35(9)+2,TA35(10)+2,TA35(11)+2)  
10 END



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43: CASE 2: IF 194 = 3 WE ARE BEFORE THE HEAD
44: 12 IN94 .NE. 0) 39 19 3)
45: P1INK(1) = 45A
46: ALINK(1) = 0
47: ALINK(45A) = 1
48: 45A = 1
49: IN94 = 1
50: LINE = 1
51: 39 T9 45
52: CONTINUE
53:
54: CASE 3: WE ARE 3945WE45 AT THE LIST, PREVIOUSLY AT THE TAIL
55:
56: 39TINK(1) = 45A
57: P1INK(1) = P1INK(45A)
58: 12 (TAIL .NE. IN94) TAIL (39TINK(45A)) = 1
59: P1INK(45A) = 1
60: CONTINUE
61: 12 (TAIL .EQ. IN94) TAIL = 1
62: IN94 = 1
63: LINE = 1
64: 12 ((1492E .EQ. 0) .NOT.EQ. 2)
65: CALL IN5C12E(C94B1F,20,NC2)
66: C943JF(121)C943JF(121)=44
67: 29 = 0
68: CONTINUE
69: CALL PR31PT ((231)>,14)
70: CALL TA3S12P(TA3S(11)+2,TA3S(2)+2,TA3S(3)+2,TA3S(4)+2,
71: TA3S(5)+2,TA3S(6)+2,TA3S(7)+2,TA3S(8)+2,
72: TA3S(9)+2,TA3S(10)+2,TA3S(11)+2)
73: 2
74: END.

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SUBROUTINE DELETE

20 SUBROUTINE DELETES A NODE FROM A LINKED BUFFER AND  
21 REARRANGES THE LINKS. SETS HEAD AND TAIL TO AVAIL STACK.

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SJRPUTIN: CHANGES %D STRING TO NEWSTRING. SYNTAX IS AS FOLLOWS
 0: 0: CHANGE /%D/STRING/NEASTRIN/
 1: ADDITIONALLY, ANY CHARACTER CAN BE USED AS A DELIMETER FOR THE STRINGS
 2: ( SHOWN AS / IN SYNTAX.

 3:   IMPLEMENTATION NOTES FOR THIS:
 4:   SJRPUT MARKS THE BEGINNING OF %D STRING IN COMMAND BUFFER
 5:   SJRPUT SCANS %D STRING IN COMMAND BUFFER
 6:   SJRPUT MARKS BEGINNING OF %D CANDIDATE MATCH STRING IN CURRENT LINE
 7:   SJRPUT SCANS CURRENT LINE FOR MATCH CHECK

 8: AFTER MATCH-1 THESE VARIABLES ARE USED FOR DATA MOVEMENT, ETC..
 9:   SJRPUT
 10:  SJRPUT MARKS THE BEGINNING OF %D STRING IN COMMAND BUFFER
 11:  SJRPUT SCANS %D STRING IN COMMAND BUFFER
 12:  SJRPUT MARKS BEGINNING OF %D CANDIDATE MATCH STRING IN CURRENT LINE
 13:  SJRPUT SCANS CURRENT LINE FOR MATCH CHECK

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420
421      IN LINE 2925 IS A NEW STATEMENT INPUT FROM THE SYSTEM
422      L4,1      1
423      L4,1      -1
424      L3,2      T
425      STA,2      TEMP,1
426
427      CONTINUE
428
429      710
430      720      COPY CHARS FROM NEWSTATEMENT INPUT FROM THE SYSTEM
431      T = ACJ31      1
432      T = GETCHAR(ACJ31) + 1
433      REPEAT 50, ACJ32, T, 0, NE, 0, DEL14
434
435      IN LINE 2925 IS STORE T INPUT FROM THE SYSTEM OF THE
436
437      730
438      740      L4,1      1
439      L3,2      T
440      STA,2      TEMP,1
441
442      750      L4,1      1
443      L3,2      80
444      STA,2      CCJ32 + 1
445      CCJ32 = CCJ32 + 1
446      T = GETCHAR(CCJ32) + 1
447
448      CONTINUE
449      COPY CHARS FROM NEWSTATEMENT INPUT FROM THE SYSTEM
450
451      760      ACJ32 = 1
452      REPEAT 50, ACJ32, T, 0, NE, 0, LT, 0, 80
453      T = GETCHAR(BUFFER(ACJ32))
454
455      IN LINE 2925 IS STORE T INPUT FROM THE SYSTEM
456
457      770
458      780      L4,1      1
459      L3,2      T
460      STA,2      TEMP,1
461      T = 1 + 1
462      J = J + 1
463
464      CONTINUE
465
466      790      IF T IS STATE < 90 AND NOT A CARRY THEN
467      REPEAT 70 WHILE T = 0, T, 0
468
469      IN LINE 2925 IS STORE 3-ANK IN SYSTEM
470
471      800
472      810      L4,1      1
473      L3,2      110
474      STA,2      TEMP,1
475
476      CONTINUE
477
478      820      715
479
480      CONTINUE
481
482      830      715
483
484      CONTINUE
485
486      840      715
487
488      CONTINUE
489
490      850      715
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492      860      715
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494      870      715
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